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09/922,045	08/03/2001	Jeff Lin	JCLA6649	7556

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EXAMINER

KNOLL, CLIFFORD H

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,045

Applicant(s)

LIN, JEFF

Examiner

Clifford H Knoll

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3, 5-8, 10-11 is/are rejected.
7) ☒ Claim(s) 4 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to communication filed 4/12/04. Currently claims 1-8 and 10-11 are pending. Claim 9 has been cancelled.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The claim 10 limitation already appears in claim 6, and was apparently incorporated therein by amendment.

Claim Rejections - 35 USC § 102

Claims 1-2, 5-11 stand rejected under 35 U.S.C. 102(e) as being anticipated by Gulick (US 6499079).

Regarding claim 1, Gulick discloses the method of providing each transaction with a value to determine an order of execution (e.g., col. 10, lines 6-8), providing each transaction with a master identification value and gathering transaction having an

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identical master identification value and accessing the shared system resource in sequence according to the value (e.g., col. 9, lines 16-20).

Regarding claim 2, Gulick also discloses write and read transactions (e.g., col. 9, line 36).

Regarding claim 5, Gulick also discloses incorporating a flush and fence signal provided by an AGP bus to ensure proper transaction execution sequence (e.g., col. 12, lines 47-61).

Regarding claim 6, Gulick discloses at least one master controller capable of submitting read and write transactions, first bus, bridging device, and second bus (e.g., col. 4, lines 45-53), a chipset coupled to the second bus and the shared system resource for selecting one of the transactions (e.g., col. 5, lines 19-21), and the master identification value (e.g., col. 9, lines 16-20).

Regarding claim 7, Gulick also discloses the PCI bus (e.g., col. 4, line 47).

Regarding claim 8, Gulick also discloses the AGP bus (e.g., col. 18, lines 12-14).

Regarding claim 10, Gulick also discloses the master identification value (e.g., col. 9, lines 16-20).

Regarding claim 11, Gulick also discloses the plurality of read and write queues for holding the master and transaction identification values (e.g., col. 13, lines 25-28).

Thus the rejection of claims 1-2, 5-11 is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Gulick in view of standard ordering practice, as further evidenced by Nishtala (US 2002/0138790).

Regarding claim 3, Gulick also discloses providing the first transaction with a transaction identification value of 0 (e.g., col. 15, lines 21-23, Figure 9), adding 0 when the previous transaction of the write transaction is the write transaction or the read transaction is the read transaction (e.g., col. 13, lines 21-25), and adding a nonzero number when the previous transaction of the write transaction is the read transaction or the read transaction is the write transaction (e.g., col. 15, lines 9-12).

Gulick neglects to mention the particular ordering of the transaction identification value as being a numerical order; however the Examiner takes Official Notice that it is widely known to use numerical order when ordering transactions as further evidenced by Nishtala. Nishtala discloses a numerical ordering of the transaction value (e.g., paragraph [0040]). It would be obvious to combine a numerical ordering with transaction identification value because numerical ordering is a standard means to establish ordering on numbers.

Thus the rejection of claim 3 is maintained.

Response to Arguments

Applicant's arguments filed 4/12/04, with respect to claims 1-3, 5-8, and 10-11 have been fully considered but they are not persuasive.

Applicant's arguments, see page 8, filed 4/12/04, with respect to claim 4 have been fully considered and are persuasive. The rejection of claim 4 has been withdrawn.

Regarding claims 1 and amended claim 6, Applicant argues that Gulick merely discloses a pipe ID, and "the pipe ID field did not label the initiating master controller" (p. 7). Examiner relies on the pipe ID in interpreting Gulick; thus, the issue rests on the relationship between the pipe ID and the initiating master controller. Here however, it is determined that the pipe ID does label the initiating master controller. Gulick first states that "[e]ach pipe (or channel), couples a function" (col. 4, lines 36-41). Gulick then teaches that "[a] function is a circuit that provides a specific function in the computer system. For example, a CPU and memory controller on a processor module are examples of functions. A PCI bridge and 1394 host controller are further examples of functions" (col. 4, lines 44-48). Gulick clearly intends to directly associate pipes with controllers, which themselves clearly contend and can be identified as master controllers; hence the pipe ID is determined to label a master controller in each instance of the identification.

Regarding claims 3 and 4, Applicant argues that “there is no evidence to prove that combinations of Gulick and standard ordering practice teach claim 1”, and that therefore dependent claims 3 and 4 are patentable (p. 8). However, although Applicant does not raise this issue with regard to the anticipation rejection, Examiner has determined that Gulick does adequately disclose the claimed “identification value to determine an order of execution of each transaction” (claim 1). At the passage cited in the 102 rejection maintained above, Gulick discloses that “[o]n pipes that support out of order pipelining, a tag number is assigned to each transaction. This tag uniquely identifies the transaction” (col. 10, lines 6-8), which is deemed adequate to disclose the “identification value” and the “order of execution” as claimed in claim 1. The standard ordering practice referred to in the obviousness rejection of claims 3 and 4 refer strictly to the limitations that are presented in these dependent claims, but not themselves disclosed by Gulick. These claims recite the particular values used for identification and in particular rely on the standard numerical ordering of integers for picking transactions. Examiner relied on Official Notice that integers are a well-known ordered set; indeed they are widely used for ordering elements, in general, and for ordering elements for “picking” one transaction, in particular. This assertion was evidenced by Nishtala, which showed just such a use to select an element by ordering them by integer tags.

Regarding claim 4, Applicant further argues that “Gulick did not mention how to treat a write and a read with the same transaction identification value. That is, Gulick did not teach that a read with the same transaction identification value of a write should

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be a subsequent read of the write" (p. 8). With this argument, regarding its recitation in claim 4, the Examiner concurs:

Gulick teaches the assignment of a transaction identification, or "tag" in the event of out of order processing, but states that a unique tag is assigned to each transaction. It would seem Gulick does not contemplate the same transaction identification being assigned to more than one transaction in this instance. Gulick does teach that write transactions take precedence over read transactions and thus take precedence over transaction identification value, but Gulick does not teach the two transactions having the same tag value and, in this instance, selecting the write transaction over the read transaction.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Gulick teaches the assignment of a transaction identification, or "tag" in the event of out of order processing, but states that a unique tag is assigned to each transaction. It would seem Gulick does not contemplate the same transaction identification being assigned to more than one transaction in this instance. Gulick does teach that write transactions take precedence over read transactions and thus take precedence over transaction identification value, but Gulick does not teach the two transactions having

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the same tag value and, in this instance, selecting the write transaction over the read transaction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

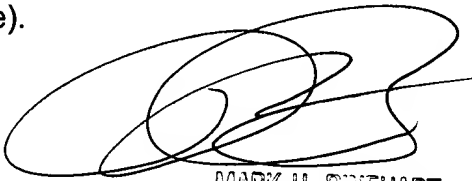
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clifford H Knoll whose telephone number is 703-305-8656. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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